

REMARKS

This amendment is in response to the Official Action mailed January 31, 2003. In the present paper, Applicant has amended claims 3, 4, 6 and 13-20, has added claims 21 and 22 and has cancelled claims 1, 2, 11 and 12. Claims 3-10 and 13-22 are now presented for the Examiner's consideration in view of the following remarks:

The Examiner has rejected claims 1-20 as anticipated by Aubert et al., U.S. Patent Publication No. 2001/0012272A1 ("Aubert"). Applicants have re-presented claims 2 and 12 in independent form, and respectfully traverse the Examiner's rejection of those claims for the following reasons. Applicants also traverse the rejection of the remaining claims as depending on the re-presented claims, and for the additional reasons stated below.

The Present Application

The present application is directed to a system and method for regulating traffic in a network. A portion of network transmission capacity is made unavailable, and thereby held as reserve capacity. The reserve capacity is not "reserved" for a particular network connection, but is instead created as an uncommitted percentage of maximum capacity so that it can be released when appropriate to regulate network traffic (present spec., p. 2, lines 19-25).

The reserve capacity is made unavailable to end users by blocking those end users from gaining access to the network. That is done by asserting a traffic regulation signal in a channel of the network. For example, Fig. 5 of the present application shows the assertion of a traffic regulation signal 410 on a timeline 404 of a signaling channel. Assertion of that signal makes the time period 412 on the communication channel timeline 402 unavailable (spec., p. 5, lines 12-18).

One advantage of the presently claimed system is that it can be implemented over networks with pre-existing network traffic control techniques that rely on network access protocol features such as assigning priorities, adjusting collision back-off delays, and dedicating pre-assigned channels. The reserve capacity technique of the presently claimed invention can overlay those media access mechanisms without the inherent complexities of integrating with those systems (spec., p. 1, lines 6-10; p. 2, lines 12-25). One type of media access mechanism that can be overlaid by the presently claimed invention is disclosed in Aubert.

The Cited Art

Aubert discloses a flow control mechanism for regulating traffic in a high speed network by reserving bandwidth for a particular network connection (paragraph 0028). The amount of bandwidth reserved is based on the characteristics of a particular user's expected traffic: peak rate, mean rate and burst length. "Just enough" bandwidth is reserved to meet that user's quality of service (QOS) requirements, as determined by those characteristics.

Aubert then enforces conformance with the bandwidth allocation by applying a "leaky bucket" algorithm to the corresponding user's incoming traffic. Parameters used in the algorithm are determined from the particular user's agreed-upon peak rate, mean rate and burst length.

Former Claims 2 & 12 Not Anticipated

The Examiner asserts that the limitations of former claims 2 and 12 are disclosed by Aubert. Specifically, the peak rate and mean rate at which a user can submit data to a network are said by the Examiner to be user-specified traffic characteristics that anticipate "asserting a

traffic regulation signal in a channel of the network.” Applicants respectfully submit that the Examiner has incorrectly interpreted those characteristics.

As described in Aubert, a user’s traffic is characterized by the network in order to determine how much bandwidth is to be “reserved” in order to insure a predetermined QOS level for that user (Aubert, ¶ 0028). The characterization is based on three descriptors of the user’s traffic: peak rate, mean rate and burst length. As best understood by the applicant, the Examiner is stating that the peak rate and mean rate are rates to which a user is limited in submitting data to the network. Applicant respectfully disagrees. Instead, peak rate and mean rate are characteristics of a user’s traffic needs that are considered in establishing an amount of bandwidth to be reserved for that user. The peak rate and mean rate of Aubert are unrelated to “asserting a traffic regulation signal in a channel of the network” as claimed in re-presented claims 21 and 22.

For those reasons, Applicants respectfully submit that re-presented claims 21 and 22 are patentable over the art cited by the Examiner.

Dependent Claims Not Anticipated

Applicants respectfully assert that dependent claims 3-10 and 13-20 are patentable because they depend from claims 21 and 22, respectively, and therefore incorporate the limitations of those claims. Applicants further traverse the Examiner’s rejection of those claims for the following additional reasons.

Claims 3 and 13 require that the traffic regulation system block all end users or end users of a specific class. The Examiner suggests that that limitation is anticipated by Aubert, ¶ 0028, which discloses a network reserving “just enough” bandwidth to meet QOS requirements. Those

QOS requirements described in Aubert, however, are used to determine the amount of bandwidth to be reserved for a given individual user, and NOT to define a specific class of users, as would necessarily be the case to anticipate claims 3 and 13. For that additional reason, Applicants submit that claims 3 and 13 are patentable over the cited art.

As to claims 4 and 14, the Examiner asserts that those claims are anticipated by the bandwidth reservation system of Aubert in combination with the X.25 and other protocols mentioned in ¶ 0006. A basic advance of the present invention over systems such as that disclosed in Aubert is that the traffic regulation system of the present invention is able to function as an overlay to systems such as the Aubert system, without inheriting the complexity of the inherent media access protocol of those systems (spec., p. 1, lines 7-10). Claims 4 and 14 are directed to that aspect of the invention, wherein the traffic regulation signal of the invention is consistent with the native access control protocol of the network. In Aubert, the X.25 protocol is itself performing bandwidth reservation (Aubert ¶¶ 0032 – 0037); there is no separate “traffic regulation control signal” to be “consistent with the protocol” as claimed in claims 4 and 14.

Claims 6 and 16 are directed to the network traffic regulation system and method of the invention, wherein the amount of reserve capacity is adjusted by monitoring an amount of unused capacity and asserting a traffic regulation signal in the network if the amount of unused capacity is less than a desired amount. The Examiner has rejected those claims as anticipated by Aubert ¶ 0011, referring to “techniques of receiving and storing incoming packet; threshold limitations are set.” That paragraph describes the leaky bucket mechanism used by Aubert in policing traffic from an individual user (Aubert, ¶¶ 0031-0037). Specifically, the token pool system described in ¶ 0011 is based on token parameters calculated from the individual user parameters of peak rate, mean rate and burst length. No “reserve capacity” is “adjusted” by the

threshold limitations of ¶ 0011, as would be required for that disclosure to anticipate claims 6 and 16. Instead, an individual user's reserved bandwidth is policed using those threshold limitations (Aubert ¶ 0031). That reserved bandwidth is fixed (not adjusted) based on the user's expected peak rate, mean rate and burst length (Aubert ¶ 0032).

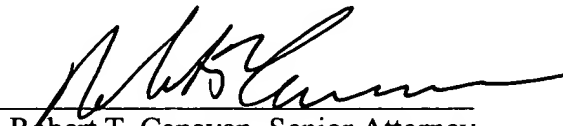
Applicant therefore respectfully submits that Aubert does not anticipate claims 6 and 16 because Aubert does not adjust reserve capacity by monitoring unused capacity and asserting a traffic regulation signal if capacity is less than a desired amount. Instead, Aubert fixes a reserved bandwidth for individual users, and polices that user's traffic to enforce conformance (Aubert ¶ 0031).

Conclusion

In sum, applicant has represented claims 2 and 12 in independent form, and submits that those claims are neither anticipated by nor obvious over the art cited by the Examiner, and specifically, Aubert. Applicant further asserts that dependent claims 3-10 and 13-20 are patentable by reason of their dependency on the re-presented claims, and for the additional reasons presented above.

Applicant wishes to thank the Examiner for his careful consideration of the above remarks and amendments, and earnestly requests reconsideration and allowance of the claims.

Respectfully,

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